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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,570	10/28/2005	Bruno Jahan	TS0.12-0003	9157
27367 7590 12/23/2008 WESTMAN CHAMPLIN & KELLY, P.A. SUITE 1400 900 SECOND AVENUE SOUTH MINNEAPOLIS, MN 55402-3244				
EXAMINER				
TSE, YOUNG TOI				
ART UNIT		PAPER NUMBER		
2611				
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12/23/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/529,570

Applicant(s)

JAHAN ET AL.

Examiner

YOUNG T. TSE

Art Unit

2611

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☒ Claim(s) 2-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 October 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date 20051028

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Inventor's Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. See page 1, lines 7-12 and 17-21; page 1, line 19 to page 2, line 4

Drawings

3. Figures 1-3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the

applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to because the block pertaining element (22) in Figure 2 needs to have descriptive labels in conformance with 37 CFR 1.84(n) and 1.84(o). For example, a descriptive label of "Binary Code" should be inserted into Figure 2 to properly describe element (22). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should not include the form and legal phraseology often used in patent claims, such as "said" in lines 5, 7, 10 and 11.

6. The disclosure is objected to because of the following informalities: page 4, line 12, "Figure 3" should be "Figure 3". Appropriate correction is required.

Claim Objections

7. Claims 2-17 are objected to because of the following informalities:

Line 1 of claim 2-13, "Method" should be "The method".

Claim 9, line 2, "said piece of extrinsic" should be "said extrinsic of".

Claim 11, lines 2 and 3, "comprises" and "optimization" should be "further comprises" and "optimizing", respectively.

Claim 12, line 3, "a step for" should be "a step of".

Claim 13, lines 3, 4 and 5, "and further", "de-interleaving step", and "said steps of demodulation" should be "further", "step of de-interleaving", and "steps of demodulating", respectively.

Claim 14, line 1, "Method" should be "A method".

Claim 15, lines 1 and 8, "device" and "implementing" should be "A device" and "for implementing", respectively.

Claim 16, lines 1 and 9, "System" and "implementing" should be "A system" and "for implementing", respectively.

Claim 17, line 1, "Application" should be "An application".

Claim 17, lines 3 and 4, " and " should be deleted within the parenthesis.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-14 and 17 are method claims, they are suggested to use in method forms. Claims 1-4 and 17 merely recite used without any active, positive steps delimiting how these use are actually practice. Without reciting any practice, positive steps, claims 1-14 and 17 do not achieve the purpose of a method.

Applicants are requested to correct the terms lack antecedent basis all over the claims. For example, in claim 1, lines 9, 10-11, 11, 13, 14, and 14, the terms "said bits", "said at least one of said precedent step", "the bit or the bits", "the coding level", "the greatest noise robustness", and "the most robust level" all lack antecedent basis.

Claims 1 and 14-17 are vague and indefinite, they are unclear how to perform the steps "decoding the at least one iteration" and "decoding the at least two successive iterations" in order to distinguish the difference of the present invention over the prior art.

Claim 8, line 5, "α" and "S_i" are undefined.

Claim 12 lacks connection or cooperation with the precedent claim 1.

The preamble of claim 17 recites an application for at least one of different fields. However, the body of the claim recites a method without any apparatus and devices related to the field.

Claim Rejections - 35 USC § 101

9. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

10. Claims 1-14 and 17 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent¹ and recent Federal Circuit decisions² indicate that a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. For example, none of the steps, such as the steps of "decoding the at least one iteration" and "decoding the at least two successive iterations" recited in the independent method claims 1, 14 and 17 claims neither transform underlying subject matter nor positively tie to another statutory category that

accomplishes the claimed method steps, and therefore do not qualify as a statutory process.

1. Diamond v. Diehr, 450 U.S. 175, 184 (1981); Parker v. Flook, 437 U.S. 584, 588 n.9 (1978); Gottschalk v. Benson, 409 U.S. 63, 70 (1972); Cochrane v. Deener, 94 U.S. 780, 787-88 (1876).
2. IN re Bilski, 88 USPQ2d 1385 (Fed. Cir. 2008).

Allowable Subject Matter

11. Claims 15 and 16 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.
12. Claims 15 and 16 would be allowable if rewritten or amended to overcome the objections, set forth in this Office action.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lee relates to an iterative decoder employs detection and post-processing of channel output samples to generate soft output values for encoded data provided to the decoder for one or more iterations of decoding.

Elgamal et al. relates to a joint detection and decoding algorithms based on the iterative soft-input-soft-output (SISO) approaches are provided.

Golitschek Edler Von Elbwart et al. relates to a method and a receiver for demodulating a modulation symbol in a communication system without knowledge of

the modulation constellation employed in a transmitter to modulate the symbol before transmission.

Bjerke et al. relates to techniques for performing iterative detection and decoding for a MIMO-OFDM communication system.

Chouly et al. relates to an iterative decoding method involves a pair of SISO decoders receiving, at their inputs, probability information components for symbols so as to supply at the output, a posteriori probability information components for the transmitted information symbols.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOUNG T. TSE whose telephone number is 571- 272-3051. The examiner can normally be reached on Monday-Friday 10:00-6:30 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on 571- 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/YOUNG T. TSE/
Primary Examiner, Art Unit 2611